

Attorney Docket No.
UBAT1340-1

Serial No. 09/964,270
Customer ID: 25094

5

IN THE CLAIMS:

----- Please amend the claims as follows:

1-19. (Canceled)

20. (Currently Amended) An apparatus, comprising:
an electrically conductive interconnect formed on at least a part of an insulating surface
on a substrate; and
at least one vertically aligned carbon nanofiber coupled to the electrically conductive
interconnect.

21. (Canceled)

22. (Currently Amended) The apparatus of claim ~~21~~ 20, wherein the at least one
vertically aligned carbon nanofiber includes a plurality of substantially vertically aligned carbon
nanofibers.

23. (Currently Amended) The apparatus of claim 20, further comprising a catalyst
coupled to the at least one vertically aligned carbon nanofiber.

24. (Original) The apparatus of claim 23, wherein the catalyst includes at least one
metal selected from the group consisting of nickel, iron and cobalt.

25. (Original) The apparatus of claim 20, further comprising the substrate, wherein the

Gray Cary/AU/4127605.1
2500940-991341

Attorney Docket No.
UBAT1340-1

Serial No. 09/964,270
Customer ID: 25094

6

substrate includes at least one member selected from the group consisting of silicon, quartz, sapphire and magnesia.

26. (Original) The apparatus of claim 20, further comprising the substrate, wherein the substrate is substantially optically transmissive.

27. (Original) The apparatus of claim 20, wherein the electrically conductive interconnect includes at least one refractory metal selected from the group consisting of W, Mo, Ta and Nb.

28. (Currently Amended) The apparatus of claim 20, further comprising an electrochemical passivator coupled to ~~at least one member selected from the group consisting of~~ at least a portion of a surface of the electrically conductive interconnect and at least a portion of a surface of the at least one vertically aligned carbon nanofiber.

29. (Original) The apparatus of claim 28, wherein the electrochemical passivator includes a dielectric layer including at least one member selected from the group consisting of SiO₂, Si₃N₄ and a polymer.

30. (Currently Amended) The apparatus of claim 28, wherein a tip of the at least one vertically aligned carbon nanofiber is not passivated.

31. (Currently Amended) The apparatus of claim 20, further comprising a buffer between the at least one vertically aligned carbon nanofiber and the electrically conductive

Gray Cary/AU4127605.1
2500940-991341

Attorney Docket No.
UBAT1340-1

Serial No. 09/964,270
Customer ID: 25094

7

interconnect

32. (Original) The apparatus of claim 31, wherein the buffer includes at least one substance selected from the group consisting of Ti, W, Mo and titanium nitride.

33. (Currently Amended) The apparatus of claim 20, wherein the at least one vertically aligned carbon nanofiber includes a plurality of fibers that are individually electrically addressable via the electrically conductive interconnect.

34. (Original) The apparatus of claim 20, further comprising a parallel lead for active capacitance coupled to the electrically conductive interconnect.

35. (Currently Amended) A biosensor, comprising the apparatus of claim 20
an electrically conductive interconnect formed on at least a part of an insulating surface
on a substrate; and
at least one vertically aligned carbon nanofiber coupled to the electrically conductive
interconnect.

36. (Currently Amended) A field emitting array, comprising the apparatus of claim 20
an electrically conductive interconnect formed on at least a part of an insulating surface
on a substrate; and
at least one vertically aligned carbon nanofiber coupled to the electrically conductive
interconnect.

Gray Cary/AU4127605.1
2500940-991341

Attorney Docket No.
UBAT1340-1

Serial No. 09/964,270
Customer ID: 25094

8

37. (Currently Amended) A kit, comprising:
- a substrate having an insulating surface;
 - an electrically conductive interconnect formed on at least a part of the insulating surface;
 - and
 - at least one vertically aligned carbon nanofiber coupled to the electrically conductive interconnect.

~~38. (Original) The kit of claim 37, further comprising instructions.~~

39. (New) The biosensor of claim 35, further comprising an electrochemical passivator coupled to at least a portion of a surface of the at least one vertically aligned carbon nanofiber.

40. (New) The biosensor of claim 39, wherein the electrochemical passivator includes a dielectric layer including at least one member selected from the group consisting of SiO_2 , Si_3N_4 and a polymer.

41. (New) The biosensor of claim 39, wherein a tip of the at least one vertically aligned carbon nanofiber is not passivated.

42. (New) The field emitting array of claim 36, further comprising an electrochemical passivator coupled to at least a portion of a surface of the at least one vertically aligned carbon nanofiber.

43. (New) The field emitting array of claim 42, wherein the electrochemical passivator

Gray Cary/AUW4127605.1
(2500940-991341)

Attorney Docket No.
UBAT1340-1

Serial No. 09/964,270
Customer ID: 25094

9

includes a dielectric layer including at least one member selected from the group consisting of SiO₂, Si₃N₄ and a polymer.

44. (New) The field emitting array of claim 42, wherein a tip of the at least one vertically aligned carbon nanofiber is not passivated.

45. (New) The kit of claim 37, further comprising an electrochemical passivator coupled to at least a portion of a surface of the at least one vertically aligned carbon nanofiber.

46. (New) The kit of claim 45, wherein the electrochemical passivator includes a dielectric layer including at least one member selected from the group consisting of SiO₂, Si₃N₄ and a polymer.

47. (New) The kit of claim 45, wherein a tip of the at least one vertically aligned carbon nanofiber is not passivated.